REMARKS

Review and reconsideration on the merits are respectfully requested.

Claims 2, 4, 6 and 8 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Examiner argues that these claims are "functionally indefinite" for the reasons given.

This rejection is respectfully traversed.

Claims 2 and 4 have been amended to recite means for heating and means for vibrating, respectively, based on the disclosed embodiments in the specification. With respect to the heating means, a band heater is disclosed in the Examples as a heating source whereas an air cylinder or the like is disclosed as an example of a vibrating source at page 6 of the specification.

Similarly, method claims 6 and 8 have been amended to as to recite positive method steps, thus removing any basis for rejection. New dependent claims 11 and 12 have been added, which recite the preferred heating source as a band heater and vibrating source as an air cylinder, respectively.

Moreover, claim 5 has been amended to recite active process steps, and also to indicate that the laminate sheet is released by curling it, from the tangential line direction of the holding roller (e.g. center roller 3). This concept of releasing from the roller is generally described at page 7 and thereafter.

In view of the foregoing, reconsideration and withdrawal of the outstanding rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Claims 1, 3, 5, 7 and 9 stand rejected under 35 U.S.C. § 102(b), as allegedly being anticipated by Masayuki et al (JP 63-158156A). The Examiner argues that Masayuki discloses a set of calendar rollers comprising at least three rollers (referring to Figure 1) for rolling a pressure-sensitive adhesive plastic material (7) into a plastic material sheet (5) and for laminating the plastic material sheet onto a base material sheet (6) at a nip portion (between a pair of nip rollers (4) and (12)) to be formed into a laminated plastic material sheet (A); a holding roller (4) for holding the plastic material sheet; a release member which is a doctor knife (14) being arranged behind the nip portion (referring to Figure 1) for releasing the laminated plastic material sheet from the holding roller.

This rejection is respectfully traversed.

The structure 14 shown in Fig. 1 of Masayuki et al corresponds to a doctor knife used for releasing a pressure-sensitive high viscosity resin from the circumferential surface of the calendering roller 4.

However, as can be seen from Figs. 1 and 2, the doctor knife 14 (and 8) as described in Masayuki et al is disposed at a nip portion such that it is inserted deeply. This structure is also apparent from the description of page 2, lower right-hand column, lines 13-17, that is, "A doctor knife 8 is disposed such that an edge of a blade thereof is inserted into a gap 9; an end of the edge of the blade is installed in contact with the circumferential surface of the first calendering roller 3 at the vicinity on the line connecting revolving centers of the first and second calendering rollers 3, 4, as shown in Fig. 2". Further, Masayuki et al describes on page 3, lower left-hand column, line 16 to lower right-hand column, line 5 that "the pressure-sensitive adhesive is

transferred to the second calendering roller 4 while being made even, when it comes into slide-contact with the lower surface of edge of the doctor knife". Namely, Masayuki et al describes that the doctor knife comes into contact with the pressure-sensitive adhesive in such a manner that the pressure-sensitive adhesive is made even by the lower surface of the edge of the doctor knife. A support coated with the pressure-sensitive adhesive is illustrated such that the support is released in the direction of the tangential line of the periphery of roller.

On the other hand, a release member (e.g., a doctor knife) of calendar rollers according to the present invention is disposed behind a nip portion of a center roller, as recited in claims 1 and 5. Accordingly, the present invention is different in constitution from Masayuki et al. Masayuki et al describes that the doctor knife as described therein is disposed at a nip portion and the lower surface of edge of the blade makes the surface of the pressure-sensitive adhesive layer even while releasing a pressure-sensitive high viscosity resin, by which craters created when releasing it from calendering roller are made even to form a uniform surface. However, when the doctor knife is disposed such that the surface of the doctor knife comes into contact with the pressure-sensitive adhesive, although a large cavity such as a crater may be made even, the surface is made rough to decrease the surface smoothness. In the present invention, the doctor knife is disposed such than the doctor knife comes into contact with the pressure-sensitive adhesive as linearly as possible, the doctor knife is disposed behind a nip portion, and the laminate sheet is released by being curled downward from the tangential line direction of a holding roller, by which a pressure-sensitive sheet excellent in surface smoothness can be formed without

generating undesired projections and depressions on the surface of the pressure-sensitive adhesive.

In view of the foregoing, Masayuki fails to defeat the patentability of Applicant's independent claims 1 and 5. Accordingly, all of the present claims should be found allowable.

At pages 3-4 of the Office Action, various dependent claims stand rejected over Masayuki et al as a primary reference, alone or in view of certain applied secondary references. In particular, the following rejections are set forth:

- Claim 10 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Masayuki et al; the Examiner argues that while Masayuki does not disclose the pressure-sensitive adhesive as being rubber-based, he argues this would be a mere matter of design choice;

- Claims 2 and 6 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Masayuki in view of Borgstrom; Borgstrom is cited as teaching a release member 15 that is heated to a temperature at 50° C or more to release a glue off an applicator roller; and

- Claims 4 and 8 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Masayuki et al in view of Gerhardt, being cited as allegedly teaching that the doctor knife can be vibrated in what is characterized as a related laminating art.

Each of these rejections is respectfully traversed.

First, Applicants respectfully submit that each of these dependent claims is patentable for at least the reasons that the parent claims 1 and 5 are patentable, as discussed above. Moreover,

Applicants respectfully submit that each of these rejected claims is patentable for at least the following additional reasons.

Claims 2 and 6: Although Borgstrom describes that the release member is preferably heated, it does not describe the meaning and effect of heating at all. Because Borgstrom uses a doctor knife in order to scrape off an excess amount of hot-melt adhesive on the coating roller, it neither describes nor suggests the improvement on surface smoothness of a plastic material sheet of the present invention.

Claims 4 and 8: Although Gerhardt describes that the doctor blade is preferably vibrated, the doctor blade as described in Gerhardt is different in purpose from the release member of the present invention. Gerhardt uses a doctor knife in order to scrape off an excess amount of coating substance during coating it on a web, and the vibration is a countermeasure against the generation of stripes on the surface coated surface. Accordingly, the present invention is remarkably different from Gerhardt. Gerhardt of course neither describes nor suggests the improvement on surface smoothness of a plastic material sheet of the present invention.

In view of the foregoing, reconsideration and withdrawal of the rejections of the dependent claims is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge any additional fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2, 4-6 and 8 are amended as follows:

2. (Amended) The set of calendar rollers according to Claim 1, [wherein] further comprising means for heating said release member [is able to be heated].

4. (Amended) The set of calendar rollers according to Claim 3, [wherein] further comprising means for vibrating said doctor knife [is able to be vibrated].

5. (Amended) A method for producing a laminated sheet by laminating a plastic material sheet on a base material sheet using a set of calendar rollers, [wherein] comprising

providing said set of calendar rollers which comprises at least three rollers, a nip portion is formed with a pair of nip rollers including a holding roller for holding a rolled plastic material sheet, and behind said nip portion, a release member is arranged in proximity to or in contact with said holding roller, and

rolling a plastic material [is rolled] into said plastic material sheet, then

laminating said plastic material sheet [is laminated] onto a base material sheet at said nip portion, and thereafter

[a] releasing the plastic material sheet layer of said laminated sheet [is released] from said holding roller by curling it with said release member.

6. (Amended) The method for producing a laminated sheet according to Claim 5, further comprising heating [wherein] said release member during said releasing step [is heated at] to a temperature of 50°C or more.

8. (Amended) The method for producing a laminated sheet according to Claim 7, [wherein] further comprising vibrating said doctor knife during said releasing step [is vibrated].

Claims 11 and 12 are added as new claims.